WHAT IS CLAIMED IS:

1. A switching apparatus comprising:

a first port coupled to receive an input data frame;

a first logic circuit coupled to receive the input data frame from the first port and configured to determine a number of copies of the input data frame to make and to make the number of copies of the input data frame;

a first memory coupled to the first logic circuit and configured to store and read the copies of the input data frame;

a second logic circuit coupled to the first memory and configured to determine when to read at least one copy of the input data frame from the first memory; and

a second port coupled to the first memory and configured to transmit the at least one copy of the input data frame.

2. The switching apparatus of claim 1 wherein the first logic circuit further comprises a third logic circuit configured to determine one or more empty locations in the first memory to store the copies of the input data frame.

3. The switching apparatus of claim 2 wherein the first logic circuit further comprises a second memory configured to keep track of all of the empty locations in the first memory.

4. The switching apparatus of claim 3 wherein:

the first memory is comprised of channels and segments, and the third logic circuit is configured to determine where there are empty channels in the first memory to store the copies of the input data frame.

5. The switching apparatus of claim 3 wherein:

the first memory is comprised of channels and segments, and the third logic circuit is configured to determine where there is at least one empty segment in the first memory to store one of the copies of the input data frame.

6. The switching apparatus of claim 2 wherein the first memory is comprised of channels that each includes segments such that each segment in each channel is independently addressable.

7. The switching apparatus of claim 1 wherein the first logic circuit further comprises a third logic circuit configured to determine how many additional ports will output some of the copies of the input data frame and to calculate the minimum amount of storage space that is necessary to store

all of the necessary copies of the input data frame in the first memory.

8. The switching apparatus of claim 6 wherein the first logic circuit further comprises a fourth logic circuit configured to determine the size of the input data frame such that the size of the input data frame is used to calculate the minimum amount of storage space necessary to store the copies of the input data frame.

9. The switching apparatus of claim 8 wherein the first memory is addressable by channels and segments and the first logic circuit is configured to determine how many channel and segment addressable locations are needed to store the number of copies of the input data frame.

10. The switching apparatus of claim 1 wherein the first memory is distributed across the switch.

11. The switching apparatus of claim 1 further comprising a bus coupled with the first memory and the second port and configured to transmit data including at least one copy of the input data frame from the first memory to the second port.

12. The switching apparatus of claim 11 wherein the second port comprises a third logic circuit configured to select the at least one copy of the input data frame from the bus.

13. The switching apparatus of claim 1 wherein the second logic circuit is further configured to indicate a location in the first memory where the second port is to obtain the at least one data frame for transmitting.

14. A switching apparatus comprising:

a first logic circuit coupled to receive an input data frame and configured to determine a number of copies of the input data frame to make and to make the determined number of copies of the input data frame;

a memory coupled to the first logic circuit and configured to store and read the copies of the input data frame, the memory being comprised of channels and segments with one or more segments being accessible at a given time; and

a second logic circuit coupled to the memory and configured to determine when to read at least one copy of the input data frame from the memory.

15. The switching apparatus of claim 14 further comprising a third logic circuit configured to determine one or more

empty locations in the memory to store the copies of the input data frame.

16. The switching apparatus of claim 15 wherein the memory is comprised of channels and segments and the third logic circuit is configured to determine where there are empty channels in the memory for storing copies of the input data frame.

17. The switching apparatus of claim 15 wherein the third logic circuit is configured to determine where there is at least one empty segment in the memory for storing at least one copy of the input data frame.

18. The switching apparatus of claim 14 further comprising a plurality of ports and wherein the first logic circuit comprises a third logic circuit configured to determine how many of the plurality of ports will output some of the number of copies of the input data frame and to calculate the minimum amount of storage space necessary to store all of the necessary copies of the input data frame in the memory.

19. The switching apparatus of claim 14 wherein the first logic circuit further comprises a fourth logic circuit

configured to determine the size of the input data frame in calculating the minimum amount of storage space to store the necessary copies of the input data frame in the memory.

20. The switching apparatus of claim 19 wherein the first logic circuit is configured to determine how many channel addressable locations and segment addressable locations are needed to store the copies of the input data frame.

21. A switching apparatus comprising:

a first port coupled to receive an input data frame;

a memory coupled to the first port and configured to store and read a number of copies of the input data frame;

a processor coupled to the memory and programmed to determine the number of copies of the input data frame to make and to determine when to read at least one copy of the input data frame from the memory; and

a second port coupled to the memory and configured to transmit the at least one copy of the input data frame after it is read from the memory.

22. The switching apparatus of claim 21 wherein the processor is programmed so as to determine one or more empty

locations in the memory to store the number of copies of the input data frame.

23. The switching apparatus of claim 22 wherein the memory is comprised of channels and segments and the processor determines where there are empty channels in the memory to store the number of copies of the input data frame.

24. The switching apparatus of claim 22 wherein the memory is comprised of channels and segments and the processor determines where there is at least one empty segment in the memory to store the number of copies of the input data frame.

25. The switching apparatus of claim 22 wherein the memory is comprised of channels and segments wherein each channel portion of each segment is independently addressable.

26. The switching apparatus of claim 21 wherein the processor determines how many additional ports will output any of the copies of the data frame and calculates a minimum amount of storage space necessary to store the copies of the input data frame.

27. The switching apparatus of claim 26 wherein the processor determines the size of the input data frame and uses this determination in calculating the minimum amount of storage space to store the number of copies of the input data frame.

28. The switching apparatus of claim 27 wherein the memory is addressable by channels and segments and the processor determines how many channel addressable locations and segment addressable locations are needed to store the number of copies of the received data frame.

29. A computer readable medium for use in a switching apparatus that includes a processor, the computer readable medium including instructions for causing the processor to:

determine a number of ports a received data frame is to be transmitted out over so as to generate a same number of copies of the received data frame;

determine particular locations in a memory that can store the copies of the received data frame;

forward instructions and the copies of the received data frame to the memory so as to cause the memory to store the copies of the received data frame;

forward instructions to the memory to read out at least one copy of the copies of the received data frame and output the at least one copy onto a bus; and

forward instructions to a port causing it to retrieve and transmit the at least one copy of the received data frame from the bus.

30. The computer readable medium of claim 29 wherein the memory is addressable by channels and segments and the processor is instructed to determine the location or locations, addressable by channels and segments, that can store the copies of the received data frame.

31. The computer readable medium of claim 30 further comprising an instruction for the memory so that it stores the copies of the received data frame in multiple segments of the memory.

32. The computer readable medium of claim 30 wherein when the memory reads out at least one copy of the number of copies of the received data frame, the memory also reads out a previously stored copy from a previously received data frame.

33. The computer readable medium of claim 29 wherein the instructions cause the processor to determine the size of the received data frame and use a result from this determination when the processor is determining particular locations in the memory to store the copies of the received data frame.